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Deathcamas

Cooperative Extension, South Dakota State University

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F.S. 57

SOUTH DAKOTA STATE COLLEGE

Cooperative Extension Service

Control and Elimination of

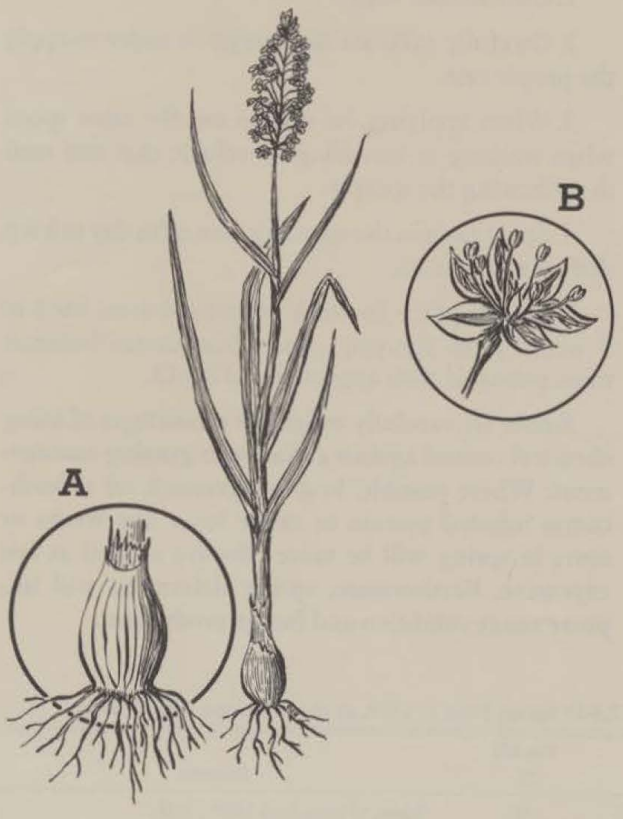
Deathcamas

Deathcamas

Deathcamas is a plant containing a poison deadly to livestock from early spring until about mid-June. After flowering, deathcamas becomes dormant, dries up, and is no longer a hazard.

A bulbous perennial herb, it grows to a height of from 5 to 24 inches. Stems and leaves are smooth, but sometimes have a whitish bloom. The dark green leaves are long and grasslike and arise from the base of the plant, much like those of an onion; while deathcamas may somewhat resemble wild onion, it does not have an onion odor.

In late April and early May, deathcamas leaves are conspicuous against the dark background of dormant prairie grasses. Small, greenish-white to yellowish flowers are borne on a long, naked flower stalk in May and June.



Deathcamas has long, grasslike leaves, ¼ to ¾ inch wide that grow from a scaly, deeply buried bulb (inset A). The flowers (inset B) are small greenish-white to yellowish, grow in clusters at the top of a stalk, and usually appear in May.

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The most common species of deathcamas in western South Dakota are grassy deathcamas[1] and mountain deathcamas[2]. These plants are also found throughout the state, and are most conspicuous on moist bottom lands and meadows. Deathcamas has been improperly labeled with many common names including "poison-camas," "poison-sego," "poison soaproot," "white-camas," "zygadene," and simply "camas."

Although it usually grows in scattered stands, a density greater than one plant per square foot is not uncommon. Heaviest concentrations are commonly found around sheep bedgrounds, feeding grounds, or other areas where animals group together often. However, deathcamas may also be abundant on ranges in high condition along streams, on primary terraces (benches) above stream beds, and on moister upland areas.

HOW DEATHCAMAS AFFECTS LIVESTOCK

Deathcamas affects the nervous system, respiration, and heart of an animal. The amount of foliage that will cause an animal's death depends on the species of plant, its stage of maturity, and the plant parts eaten. Generally speaking, a 125-pound ewe will die if she eats one-half to 2 pounds of green deathcamas foliage in a day. Animals that are severely poisoned usually die; those that consume less foliage and are less seriously affected may recover. Symptoms of deathcamas poisoning are: (1) Rapid breathing, (2) Excessive salivation, (3) Nausea and vomiting, (4) Weakness and staggering, (5) Convulsions, and (6) Coma.

Keeping livestock away from deathcamas by sea-

[1] *Zigadenus gramineus.*
[2] *Zigadenus elegans.*

sonal deferment and feeding a protein supplement are the best range management control practices. It is not advisable to trail livestock through deathcamas in the fruiting stage as fruiting heads are highly poisonous.

A PROBLEM IN SOUTH DAKOTA

The economic losses to agriculture in the state as a result of deathcamas (and other poisonous plants) are difficult to estimate. Whatever the loss, the livestock producer is always aware of the problem, though not always sure of the prevention and/or cure.

At the Antelope Range Field Station near Buffalo, South Dakota, deathcamas poisoning has killed at least one ewe or lamb each spring or early summer. In May of 1959, deathcamas infestation was excessive in the spring lambing pasture at Antelope Range. Because losses from deathcamas poisoning interrupt production results of sheep research, tests were conducted to rid the pasture of the plant. Available information indicated successful control with 2 to 4 pounds of 2,4-D (ester) when applied at the early bud stage.

Six small areas (varying from 2,700-38,250 sq. ft.) were sprayed using a 5-gallon back-pack boom-type sprayer on June 1, 1959.

Iso-propyl ester of 2,4-D with an acid equivalent of 3⅓ pounds per gallon was used. The 2,4-D was applied at 3 pounds per acre by spraying a 3- to 4-foot swath while walking back and forth across each infested area. Only small, heavily infested areas were sprayed to facilitate mapping and estimating the number of plants in each site. Deathcamas plants were in the early bud and full bloom stage. About 2 acres were sprayed.

In May of 1960, visual estimates of the percent deathcamas eradicated were made on each of the six areas. Results are shown in the table.

Because 2,4-D is toxic to most broad-leaved plants, other native forbs were killed. Also, there was a partial to complete kill of silver sagebrush and western snowberry.

FURTHER CONTROL ATTEMPTS

In the spring of 1960, other large areas with many deathcamas plants were noted in a summer sheep pasture. Use of a back-pack sprayer was not practical because the areas were from 1 to 5 acres. Consequently, a 200-gallon power sprayer, pulled by a pickup truck was used on June 1. The sprayer was pulled at about 5 m.p.h. and the width of the swath sprayed was about 5 to 6 feet. The same chemical spray was used at the same rate as in 1959. Results will not be determined until May 1961.

PROCEDURE FOR CONTROL

Scattered deathcamas plants in a high condition pasture or range will usually not be a serious hazard to livestock. Infestation must be bad enough to warrant the expense of chemical control. Also, the cost of application must be considered in addition to the cost of the chemical. Finally, harmful effects of 2,4-D (as well as other chemicals) on other plant life must be kept in mind. Native forbs, especially legumes, will be seriously affected for a long period.

The following points are important to obtain good results when spraying 2,4-D on deathcamas:

1. Use the ester form.

2. Carefully calibrate the sprayer in order to apply the proper rate.

3. When applying, be sure to use the same speed when walking or travelling by vehicle that was used in calibrating the sprayer.

4. Spray early in the morning on a calm day to keep drift at a minimum.

5. Do not graze livestock in sprayed areas for 1 to 2 weeks after spraying, since deathcamas becomes more palatable with application of 2,4-D.

Above all, carefully weigh the advantages of using chemical control against a change in grazing management. Where possible, keeping livestock off a deathcamas infested pasture or range for a few weeks or more in spring will be more effective as well as less expensive. Furthermore, spring deferment will improve range condition and forage production.

Visual Estimates of Success of Deathcamas Control with 2,4-D Spray, June 1, 1959, at the Antelope Field Station

Area	Est. size of area, sq. ft.	Estimated density of deathcamas		Est. kill %	Remarks
		June 1, 1959	May 18, 1960		
1	38,250	1 plant per sq. yd.	0-1 plant per sq. rod	90	Most of area had 100% kill.
2	20,250	1 plant per sq. ft.	No Estimate	90-95	Scattered plants survived; apparently some spots missed by spray.
3	8,100	1 plant per sq. yd.	No Estimate	75-80	None
4	8,100	1 plant per sq. ft.	No Estimate	75	Outside edges of area probably missed by spray as indicated by more plants surviving.
5	2,700	1 plant per sq. ft.	No Estimate	85-90	None
6	5,400	1 plant per 2 sq. ft.	1 plant per sq. rod	95-98	Only about 30 plants growing in entire area.

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